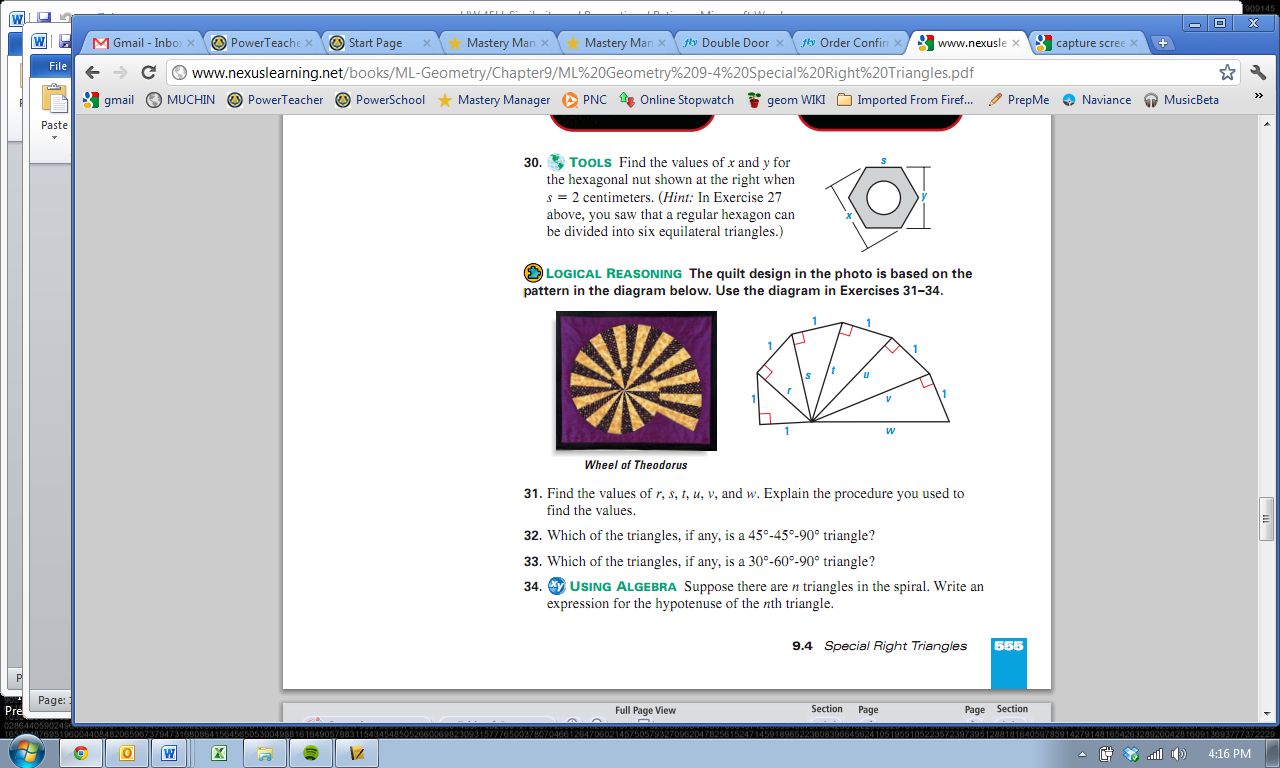
**Extended HW Week 22 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Special Right Triangles Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per\_\_\_**

The quilt design in the photo is based on the pattern in the diagram below. Use the diagram to answer the following questions.



1. Find the values of r, s, t, u, v and w. Explain the procedure you used to find the values.

**r = \_\_\_\_\_**

**s = \_\_\_\_\_**

**t = \_\_\_\_\_**

**u = \_\_\_\_\_**

**v = \_\_\_\_\_**

**w = \_\_\_\_\_**

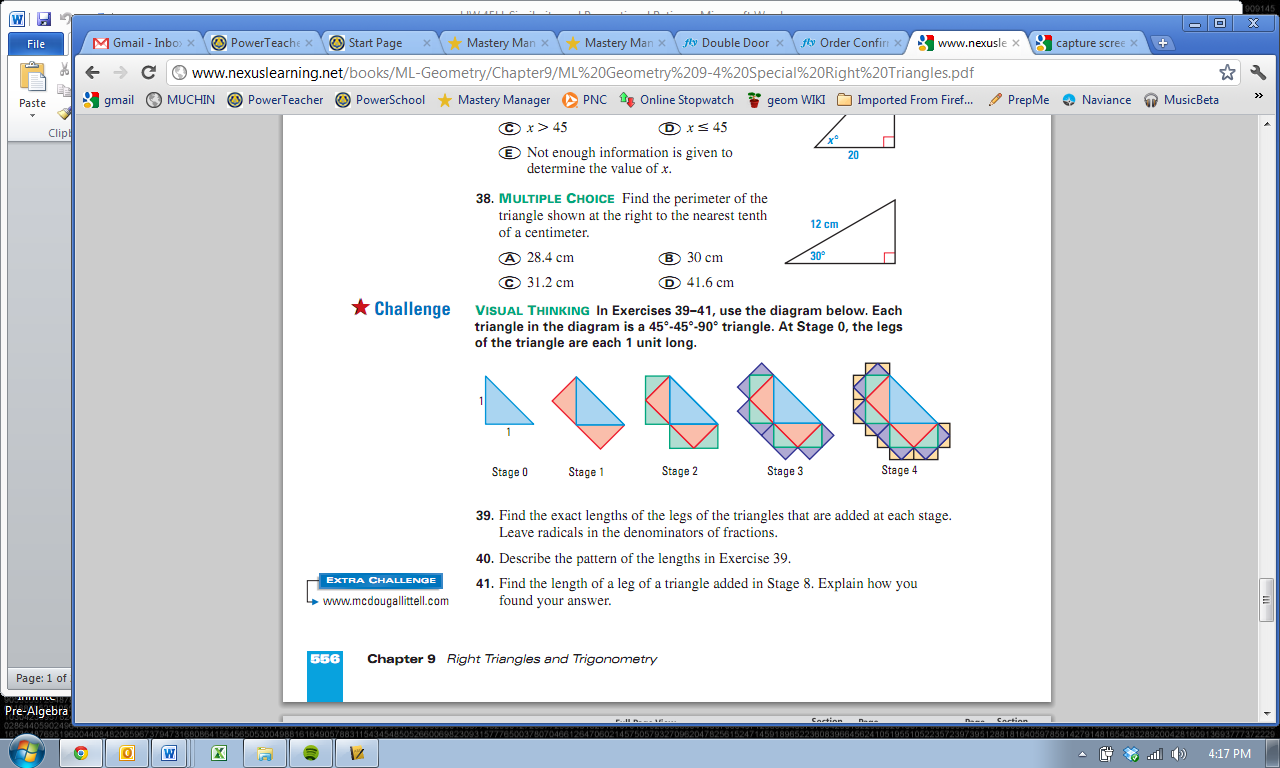
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1. Which of the triangles, if any, is a 45° – 45° – 90° triangle?
2. Which of the triangles, if any, is a 30° – 60° – 90° triangle?
3. Suppose there are n triangles in the spiral. Write an expression for the hypotenuse of the nth triangle.

Use the diagram below for the questions that follow. Each triangle in the diagram is a 45° – 45° – 90° triangle. At Stage 0, the legs of the triangle are each 1 unit long.



1. Find the exact lengths of the legs of the triangles that are added at each stage. Leave radicals in the denominators of fractions. (You can label these values on the figure itself)
2. Describe the pattern of the lengths in #5.

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1. Find the length of a leg of a triangle added in Stage 8. Show your work below and explain how you found your answer.

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